State of Iowa - Return on Investment Program / IT Project Evaluation

SECTION 1: PROPOSAL

Tracking Number (For Project Office Use)

019

Project Name: DTV Conversion Date: September 30, 2000

Agency Point of Contact for Project: Bill Hayes_____

Agency Point of Contact Phone Number / E-mail: _242-3116/Hayes@IPTV.org_____

Executive Sponsor (Agency Director or Designee) Signature: C. David Bolender_____

Is this project necessary for compliance with a Federal standard, initiative, or statute? (If "Yes," cite specific requirement, attach copy of requirement, and explain in Proposal Summary)	X❑ Yes	❑ No
Is this project required by State statute? (If "Yes," explain in Proposal Summary)	X❑ Yes	
Does this project meet a health, safety or security requirement? (If "Yes," explain in Proposal Summary)	❑ Yes	N/A
Is this project necessary for compliance with an enterprise technology standard? (If "Yes," explain in Proposal Summary)	X❑ Yes	❑ No
Does this project contribute to meeting a strategic goal of government? (If "Yes," explain in Proposal Summary)	X❑ Yes	❑ No
Is this a "research and development" project? (If "Yes," explain in Proposal Summary)	❑ Yes	N/A

PROPOSAL SUMMARY:

In written detail, explain why the project is being undertaken and the results that are expected. This includes, but is not limited to, the following:

1. A pre-project (before implementation) and a post-project (after implementation) description of the system or process that will be impacted.

2. A summary of the extent to which the project provides tangible and intangible benefits to either Iowa citizens or to State government. Included would be such items as qualifying for additional matching funds, improving the quality of life, reducing the government hassle factor, providing enhanced services, improving work processes, complying with enterprise technology standards, meeting a strategic goal, avoiding the loss of matching funds, avoiding program penalties/sanctions or interest charges, avoiding risks to health/security/safety, complying with federal or state laws, etc.

3. A summary that identifies the project stakeholders and how they are impacted by the project.

Iowa Public Television
IT Project Evaluation: Digital Television Conversion
Section 1: Proposal Summary

Iowa Public Television is a statewide public and educational telecommunications network that produces and broadcasts local and national, educational and cultural programming throughout Iowa. In a rural state like Iowa, there needs to be a place of universal access, a place where public interest and educational programming is available to everyone, regardless of where they live or what they can afford to pay.

Digital television (DTV) is a new broadcast standard mandated by the Federal Communications Commission that will ultimately replace the current analog television broadcast signal we receive today. It will require new television receivers, as well as new broadcast facilities. Digital television will allow a greater amount of information to be transmitted through a broadcast signal. HDTV is the high-definition television that a digital broadcast signal allows, bringing pictures and sound clarity superior to today's television. The current frequency spectrum is getting too crowded to handle all the uses we demand of it – more television channels, cell phones, public safety, etc.

The Federal Government has mandated that the entire broadcast industry converts from our present analog transmission standard to a new digital transmission standard. For commercial television stations, this has to be completed by May 1, 2002. For public broadcasters, the conversion must be completed by May 1, 2003. The current system of broadcasting will be maintained through 2006 and perhaps later than 2006.

If IPTV is to comply with the Federal directive we must aggressively construct facilities to complete the conversion of the eight transmitter locations throughout the state and the headquarters in Johnston. We project approximately 18-month construction cycle for each of the transmitters and approximately 3 years for the headquarters facility and mobile unit. This represents 15 years of technical construction activity that must take place in a very short period of time.

Joint private/public partnerships with commercial broadcasters will be made whenever practicable. While these partnerships offer many advantages, they also dictate our schedule for construction. Joint private/public partnerships are being developed in Des Moines, Waterloo and Mason City. The timing of the digital television funding is critical, because by moving along with our commercial partners and sharing facilities, IPTV will save hundreds of thousands of dollars over the course of the transition to digital television. Another critical component to the construction schedule will be the high demand for tower crews and equipment.

Iowa Public Television has submitted three proposals for a PTFP grant in the current FY '01 cycle. The proposal is for a transmitter in Des Moines, an antenna in Cedar Rapids/Waterloo, and for new digital production and editing equipment. These three grant requests ask for over $700,000 in federal funds, with an Iowa Public Television match of $2.2 million from state appropriations.

The conversion to digital television will ensure that Iowa Public Television shall continue to work towards the goals of the Vilsack/Pederson Leadership Agenda. Such goals consist of:

"…Education – A quality lifetime, lifelong education system for all Iowans.

- Iowa will be a nationally recognized leader in pre-kindergarten learning, emphasizing parents as their children's first and best teachers;
- Schools will be well connected with Iowans and their communities; and
- Opportunities to pursue post-secondary education and needed workplace skills enhancement will be increased…

…Workforce, Economy, and Agriculture – Iowa will be a world leader in the new economy.

- Grow, retain, and recruit a skilled workforce; and
- Prepare Iowa's communities for future growth and development…

…Accountable Democracy – The Executive Branch of State Government will be an organization of performance excellence.

- Government information and services will be offered when and where it is convenient to Iowans…"

Iowa Public Television is watched each week by hundreds of thousands of people because it provides services that address the many unique and singular needs of Iowans. Public television delivers programs to people, not eyeballs to advertisers, and that's why it deals with issues commercial program services ignore. This organizational philosophy, mission and practice is why Iowa Public Television is consistently the top rated statewide public television network in the United States.

The advantages of digital television will allow IPTV to greatly expand its services to Iowans.

Expanded Viewing: When programs are not being broadcast in high definition (HDTV), IPTV will be able to transmit four or more channels simultaneously. IPTV plans to use its digital facilities to multicast four separate channels of programming geared toward diverse audiences:

Children's Channel – We THINK KIDS. Next to parents, television is a child's most influential teacher. Our extensive lineup of children's programming demonstrates our commitment to the future and to those who will take us there. To this end we will dedicate an entire channel as a safe place for children filled with pre-school and school aged programming.

Prime Times - programming aimed at addressing the specific and unique interests and concerns of Iowa's senior population.

Lifelong Learning Television - a place for formal instructional programming and repeats of general audience how-to programming.

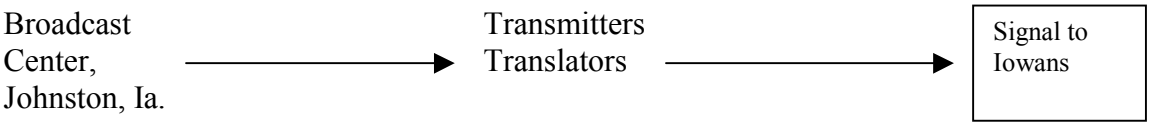
Iowa Public Affairs Television - a place where citizens can get information about their government through coverage of public affairs issues, events & meetings, and state government and legislative activities. We are a neighbor, committed to showcasing all that Iowa has to offer. Over 1 million people use our services each week because they see on Iowa Public Television programming that is not available anywhere else.

Expanded Information: Data transmission will allow viewers to get more information from television programs while viewers are watching. For example, during a program a viewer may be given the opportunity to click a button to receive more detailed information (possibly in text format) on the topic being presented. There may be written materials that are related to the video programming, course-related materials, such as teacher and student guides, and selected portions of the Internet or World Wide Web sent directly to the television set without the need for a computer, telephone connections, or an

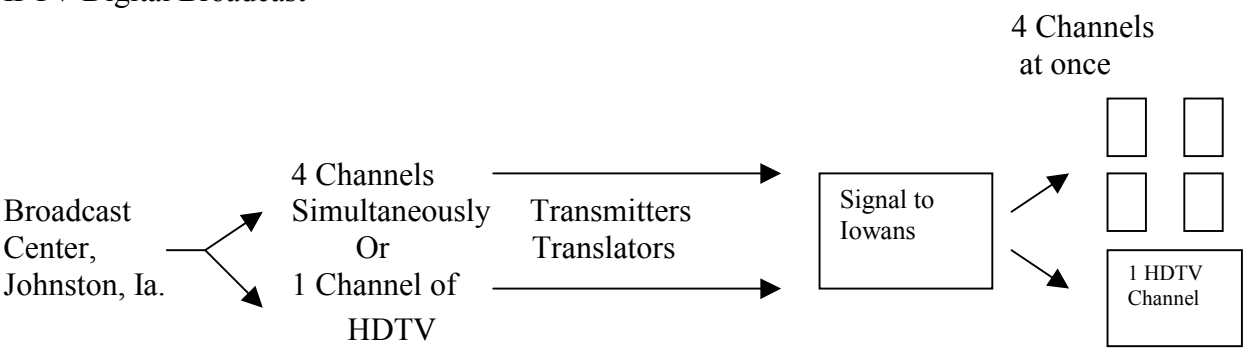
access provider. Enhanced programs such as FRANK LLOYD WRIGHT are being tested now. This will not only enhance the entertainment and educational experience, but also provide great benefits for telecourses and other adult learning opportunities. In addition, educational content for K-12 students can be transmitted in ways that are not possible in the current television system. For example, learning software for K-12 can be transmitted to computers overnight via IPTV's digital broadcast signal.

CONVERTING TO DIGITAL – OPENING NEW WORLDS

IPTV Broadcast at Present



IPTV Digital Broadcast



SECTION 2: PROJECT PLAN

Individual project plans will vary depending upon the size and complexity of the project. A project plan includes the following information:

1. Agency Information

Project Executive Sponsor Responsibilities: Identify, in Section I, the executive who is the sponsor of the project. The sponsor must have the authority to ensure that adequate resources are available for the entire project, that there is commitment and support for the project, and that the organization will achieve successful project implementation.

Organization Skills: Identify the skills that are necessary for successful project implementation. Identify which of these skills are available within the agency and the source(s) and acquisition plan for the skills that are lacking.

2. Project Information

Mission, Goals, Objectives: The project plan should clearly demonstrate that the project has developed from an idea to a detailed plan of action. The project plan must link the

project to an agency's mission, goals, and objectives and define project objectives and how they will be reached. The project plan should include the following:

A. **Expectations**: A description of the purpose or reason that the effort is being undertaken and the results that are anticipated.

B. **Measures**: A description of the set of beliefs, tradeoffs and philosophies that govern the results of the project and their attainment. How is the project to be judged or valued? What criteria will be used to determine if the project is successful? What happens if the project fails?

C. **Environment:** Who will provide input (e.g., businesses, other agencies, citizens) into the development of the solution? Are others creating similar or related projects? Are there cooperation opportunities?

D. **Project Management and Risk Mitigation**: A description of how you plan to manage the project budget, project scope, vendors, contracts and business process change (if applicable). Describe how you plan to mitigate project risk.

E. **Security / Data Integrity / Data Accuracy / Information Privacy**: A description of the security requirements of the project? How will these requirements be integrated into the project and tested. What measures will be taken to insure data integrity, data accuracy and information privacy?

3. Current Technology Environment (Describe the following):

A. **Software (Client Side / Server Side / Midrange / Mainframe)**

- Application software
- Operating system software
- Interfaces to other systems: Identify important or major interfaces to internal and external systems

B. **Hardware (Client Side / Server Side / Mid-range / Mainframe):**

- Platform, operating system, storage and physical environmental requirements.
- Connectivity and Bandwidth: If applicable, describe logical and physical connectivity.
- Interfaces to other systems: Identify important or major interfaces to internal and external systems.

4. Proposed Environment (Describe the following):

A. Software (Client Side / Server side / Mid-range / Mainframe)

- Application software.
- Operating system software.

- Interfaces to other systems: Identify important or major interfaces to internal and external systems.
- General parameters if specific parameters are unknown or to be determined.

B. Hardware (Client Side / Server Side / Mid-range / Mainframe)

- Platform, operating system, storage and physical environmental requirements.
- Connectivity and Bandwidth: If applicable, describe logical and physical connectivity.
- Interfaces to other systems: Identify important or major interfaces to internal and external systems.
- General parameters if specific parameters are unknown or to be determined.

Data Elements: If the project creates a new database the project plan should include the specific software involved and a general description of the data elements.

Project Schedule: A schedule that includes: time lines, resources, tasks, checkpoints, deliverables and responsible parties.

Iowa Public Television
IT Project Evaluation: Digital Television Conversion
Section 2: Project Plan

1. Agency Information

The project executive sponsor is C. David Bolender, Executive Director of Iowa Public Television.

Iowa Public Television has a talented, capable and dedicated team of staff members prepared to lead the conversion to digital television. For more than 30 years, IPTV has been a source of original innovative programming about Iowa – programming that educates, enlightens and entertains. IPTV has the technical expertise, organizational skills, and planning skills required for a project of this magnitude.

Iowa Public Television shall work with engineering firms such as John F.X. Browne and Patlin Engineering for the specialized design skills required in the project. IPTV shall work with the architectural firm KJWW Engineering for the design of the building facilities required at the towers.

Iowa Public Television shall also work with the Purchasing Division of the Department of General Services to acquire the transmitters, antennas, digital equipment, and installation services that shall be acquired during the course of this project. IPTV shall also work with the Attorney General's Office to purchase towers and other specialized needs for this project.

2. Project Information

A. Expectations:

Iowa Public Television has been a leading force in public broadcasting from the very first day of operation. As Iowans, we take pride in this wonderful resource. IPTV is a public-private partnership that illustrates what's best about Iowa. Educational as well as entertaining, the quality of IPTV programs are its most impressive aspect.

The opportunities for IPTV to continue our leadership role in this new century are bright and clear. A vital opportunity is to bring digital television to Iowans and to do so by 2003, in compliance with FCC requirements.

Among the benefits of digital television is the ability to simultaneously broadcast multiple channels of programming. With digital television, IPTV will be able to better meet the diverse viewing needs of residents – from our seniors to our young children and everyone in between.

B. Measures:

To maintain our high quality of broadcast programming, Iowa Public Television has identified the following strategic goals for the five-year period of 2000 – 2004.

TECHNOLOGY

IPTV will design and execute a plan for conversion to digital broadcast format in compliance with FCC requirements. The plan will result in digital television service to all Iowans. IPTV will secure funding necessary for execution of the plan from appropriate sources, including but not limited to the State of Iowa, corporations, foundations and individuals with an interest in IPTV.

EXPANSION OF SERVICES

IPTV will make maximum use of expanded broadcast capability resulting from the conversion to the digital format. Plans will be developed to use the simultaneous, multiple-channel broadcast capabilities of the digital format to broaden program offerings and thereby better meet the educational needs of Iowans. Already the state's largest provider of information and entertainment programming about Iowa, IPTV's role will grow even greater with the expansion of services. Programming will be made available to PBS and will help educate America about Iowa.

PROGRAMMING ENHANCEMENTS

Specifically, consideration will be given to development of expanded broadcast services focusing on the needs of seniors and a special channel providing programming for young children, both groups whose needs often go unmet elsewhere. In addition, IPTV will expand its already considerable commitment to public affairs programming, with special public affairs channels providing Iowans additional information about their governments.

INTERACTIVE PROGRAMS

IPTV will develop or obtain interactive programs to fully realize the benefits of the digital format. These programs will be made available to schools and colleges, not-for-profit organizations and associations and the general population of the state.

Digital television allows great leaps forward in our ability to use television to educate students, to better inform all viewers about areas of their interests, and to expand the opportunities of all Iowans to participate in discussion and debate about issues important to their future.

Iowa Public Television shall be measured:
1. By being on-air by May, 2003.
2. By being able to reach 100% of Iowans in the State through a broadcast signal.
3. By expanding program offerings using the simultaneous, multiple-channel broadcast capabilities of the digital format
4. By enhancing programs to underserved segments of Iowa's population, and
5. By the offering of interactive programs, either developed in house or obtained, to schools and colleges.

If Iowa Public Television is unable to be on-air with eight digital transmitters by May, 2003, IPTV risks losing the digital licenses for the transmitters which are not on-air. If that were to happen, once the simulcast period is over, IPTV would be unable to transmit any signal in the areas where the digital licenses were lost.

C. Environment

The Federal Government has mandated that the entire broadcast industry converts from our present analog transmission standard to a new digital television standard. For commercial television stations, this has to be completed by May 1, 2002. For public broadcasters, the conversion must be completed by May 1, 2003. The current system of broadcasting will be maintained through 2006 and perhaps later than 2006.

Joint private/public partnerships with our commercial broadcasters will be made whenever practicable. By moving along with our commercial partners and sharing facilities, IPTV will save hundreds of thousands of dollars over the course of the transition to digital television.

D. Project Management and Risk Mitigation:

Our Director of Engineering is the project manager for the digital television conversion. IPTV also has two Assistant Directors of Engineering involved in the project. In addition, we have re-assigned duties so that we have a Senior Engineer dedicated solely to this project. He will be responsible for working with vendors and contractors on an on-going basis.

There will be changes in applied technologies, therefore a well-developed plan will include options for accommodating change and will have a scaleable approach. Experts in their field have been contracted with to work with IPTV staff to build transition plans. John F.X. Browne has looked at all eight transmitter sites to determine what solutions would work at each location. The plan includes height of towers, pattern of the antenna signals, and level of power required. Patlin Electronics has developed a base programming transition plan for the Johnston Headquarters. The plan is a four year staged conversion plan that is aggressive but attainable. KJWW Engineering Consultants shall be used to resolve facility issues at each site.

A critical factor in the management of this project is the timely availability of funds. Experience in other states indicates that IPTV needs approximately 18 months to install and test the transmitter equipment. Funds must be available in advance of the 18 months so that IPTV can commit to private/public partnerships and legalities taken care of before the commitment to vendors. IPTV must also be able to commit to vendors on projects that do not involve commercial partners.

To mitigate project risks, we will enter into joint private/public partnerships wherever feasible. We will work with the Purchasing Division of the Dept. of General Services to purchase equipment at the lowest

cost possible, while still adhering to State of Iowa policies and procedures. For example, we have sent a bid out for all eight transmitters to be purchased over 3 years, rather than purchasing 1 or 2 transmitters at a time on an as needed basis. Vendors will reduce the cost of an individual transmitter when they are guaranteed a total of 8 transmitters statewide. Additionally, we are working closely with our Assistant Attorney General. He will review all leases and purchase agreements required for this project.

E. Security/Data Integrity/Data Accuracy/Information Privacy: N/A

3. Current Technology Environment

Existing Facilities:
Iowa Public Television has 8 separate high power RF transmitters across the State of Iowa. Each site has a unique situation, requiring a unique solution. Equipment at each site includes tower, transmitter, building, antenna and transmission line, RF components, monitoring equipment and land leases.

At IPTV Johnston's headquarters:

- Acquisition: Facilities supporting acquisition of source programming to include: Multiple PBS network and subscription satellite feeds, Fiber Optic feeds; and terrestrial microwave EFP (remote) feeds.
- Play to air: Location of multiple videotape machines (various formats) used for preview and playout of promotional announcements (promos), Public Service Announcements (PSA's) and sustaining (long duration) programming. Play-to-Air also provides tape delay and cable head-end program origination.
- Master Control: Point of control for manual/automated sequencing, selection and combining of video and audio signals for presentation to a television transmission system.
- Production: Control room with video switching and audio mixing equipment to support for producing live/taped television programs. Due to the redundancy of equipment, some on-line post production and program assembly of pre-recorded programs is also possible. Live studio originated programming is the primary function.
- Graphics: Defined operational work area and necessary computer assisted hardware for capture and storage of the video image (still store), provide Character Generation titling (topography) with limited animation and modeling capabilities.
- Edit Bays: Defined work areas containing high-end computer controlled linear and non-linear videotape editing systems. Non-linear suites support off-line machine-to-machine editing and program viewing.
- Technical Support: Location of signal distribution, patching and main frame equipment necessary to support operational control panels throughout the plant. Equipment in this room typically generates most of the heat and noise associated with a television production facility.
- Resource Management: System or systems providing coordination of station traffic, event logging, and reconciliation. System interface provides automation of on-line switching and machine control function.
- Tertiary Support: Multiple and distinct work areas providing support and connectivity to the Internet, access to Distance Learning, Interactive, Educational Telecommunications and Video/Audio Duplication.
- Transmission: Codec technology interface to the statewide fiber network, distributing the television signal to eight separate high-power RF transmitters. Backhaul capabilities include video/audio status and telemetry transmitter control.
- Mobile Unit: Mobile units are currently being rented at a cost of over $100,000 a year to meet the needs of various production events.

4. Proposed Environment

Existing Facilities:

Iowa Public Television shall have 16 separate high power RF transmitters across the State of Iowa for the length of the time that IPTV will be required to transmit both the analog and digital signals. At the end of simulcasting, IPTV shall go back to 8 RF transmitters capable of transmitting digital signals.

At IPTV Johnston's headquarters:

- Acquisition: Facilities supporting acquisition of source programming to include: Multiple PBS network and subscription satellite feeds, Fiber Optic feeds; and terrestrial microwave EFP (remote) feeds. System also enables data (bit rate) extraction, ATSC decoding and High Definition to Standard Definition conversion necessary for simulcasting.
- Play to air: Location of multiple videotape machines (various formats) and multiple servers used for preview and play to air promotional, commercial (PSA) spot insertion and sustaining material. Also provides tape/server delay and cable head-end program origination.
- Master Control: Point of control for manual/automated sequencing, selection and combining of video and audio signals for presentation to a television transmission system. New equipment allows 1.5Gb/s true HD switching and branding, 360 MB/s SDI processing of the NTSC signal and the capability for the fourth and final ATSC Standard Definition multicasting channel, with branding.
- Production: Control room with video switching and audio mixing equipment necessary for producing live/taped television programs. Due to the redundancy of equipment, some on-line post production and program assembly of pre-recorded programs is also possible. Live studio originated programming is the primary function. Closed captioning for the 1.5Gb/s data stream.
- Graphics: Defined operational work area and necessary computer assisted hardware to capture and store video images (still store), provide Character Generation titling (topography) with limited animation and modeling capabilities. New equipment will provide full digital processing with presentation in 16:9 and/or 4:3 aspect ratios.
- Edit Bays: Defined work areas containing high-end computer controlled linear and non-linear videotape editing systems. Non-linear suites support off-line machine-to-machine editing and program viewing.
- Technical Support: Location of signal distribution, patching and main frame equipment necessary to support operational control panels throughout the plant. Equipment in this room typically generates most of the heat and noise associated with a television production facility.
- Resource Management: System or systems providing coordination of station traffic, event logging, and reconciliation. System supports local origination of Program and System Identification Protocol (PSIP) data stream, in addition, interfaces provide automation of on-line switching and machine control functions.
- Tertiary Support: Multiple and distinct work areas providing support and connectivity to the Internet, access to Distance Learning, Interactive, Educational Telecommunications and Video/Audio Duplication.
- Transmission: Codec technology interface to the statewide fiber network, distributing the television signal to eight separate high-power RF transmitters. Backhaul capabilities include video/audio status and telemetry transmitter control. New equipment supports simultaneous transport of NTSC and 19.39Mb/s SDI signals.
- Mobile Unit: Four camera mobile unit with digital uplink and conversion capabilities for HDTV origination.

Project Schedule:

See letter from Edward Caleca, Senior Vice President, PBS Technology and Operations, regarding FCC deadlines for digital conversion.
See Timeline Excel Worksheet File.

SECTION 3: Return On Investment (ROI) Financial Analysis

Project Budget:

Provide the estimated project cost by expense category.

Personnel	$_____
Software	$_____
Hardware	$_____
Training	$_____
Facilities	$_ 1,650,000
Professional Services	$____ 907,500
Supplies	$_____
Other (Specify)……	$____ 19,442,500
Total	$____ 22,000,000

Other: Towers, antennas, transmission lines, RF components, mobile unit
Digital equipment for: Acquisition, play to air, master control, production, graphics, edit bays

Project Funding:

Provide the estimated project cost by funding source.

State Funds	$____22,000,000	_____100	% of total cost
Federal Funds	$_____	_____	% of total cost
Local Gov. Funds	$_____	_____	% of total cost
Private Funds	$_____	_____	% of total cost
Other Funds (Specify)	$_____	_____	% of total cost
Total Cost:	$____22,000,000	_____100	% of total cost

How much of the cost would be incurred by your agency from normal operating budgets (staff, equipment, etc.)? ..... $_____0_ ____0_%

How much of the cost would be paid by "requested IT project funding"? .. $____22,000,000 _100 %

Provide the estimated project cost by fiscal year: FY_____01 $_____22,000,000_____

This project request of $22,000,000 is part of an overall project with a total budget of $40,000,000. Previously, $7,000,000 has been awarded by the State. With this additional $22,000,000, $11,000,000 of funding is still required to complete the project and to meet the FCC mandate.

ROI Financial Worksheet Directions (Attach Written Detail as Requested):

Annual Pre-Project Cost -- Quantify, in written detail, all actual State government direct and indirect costs (personnel, support, equipment, etc.) associated with the activity, system or process prior to project implementation. This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

Annual Post-Project Cost -- Quantify, in written detail, all estimated State government direct and indirect costs associated with activity, system or process after project implementation. This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

State Government Benefit -- Subtract the total "Annual Post-Project Cost" from the total "Annual Pre-Project Cost." This section should be completed only if State government costs are expected to be reduced as a result of project implementation.

Citizen Benefit -- Quantify, in written detail, the estimated annual value of the project to Iowa citizens**.** This includes the "hard cost" value of avoiding expenses (hidden taxes) related to conducting business with State government. These expenses may be of a personal or business nature. They could be related to transportation, the time expended on or waiting for the manual processing of governmental paperwork such as licenses or applications, taking time off work, mailing, or other similar expenses.

Opportunity Value/Risk or Loss Avoidance Benefit -- Quantify, in written detail, the estimated annual benefit to Iowa citizens or to State government. This could include such items as qualifying for additional matching funds, avoiding the loss of matching funds, avoiding program penalties/sanctions or interest charges, avoiding risks to health/security/safety, avoiding the consequences of not complying with State or federal laws, providing enhanced services, avoiding the consequences of not complying with enterprise technology standards, etc.

Total Annual Project Benefit -- Add the values of all annual benefit categories.

Total Annual Project Cost -- Quantify, in written detail, the estimated annual new cost necessary to implement and maintain the project including consulting fees, equipment retirement, ongoing expenses (i.e. labor, etc.), other technology (hardware, software and development), and any other specifically identifiable project related expense. In general, to calculate the annual hardware cost, divide the hardware and associated costs by three (3), the useful life. In general, to calculate the annual software cost, divide the software and associated costs by four (4), the useful life. This may require assigning consulting fees to hardware cost or to software cost. A different useful life may be used if it can be documented.

Benefit / Cost Ratio – Divide the "Total Annual Project Benefit" by the "Total Annual Project Cost." If the resulting figure is greater than one (1.00), then the annual project benefits exceed the annual project cost. If the resulting figure is less than one (1.00), then the annual project benefits are less than the annual project cost.

ROI -- Subtract the "Total Annual Project Cost" from the "Total Annual Project Benefit" and divide by the amount of the project funds requested.

Benefits Not Cost Related or Quantifiable -- List the project benefits and articulate, in written detail, why they (IT innovation, unique system application, utilization of new technology, hidden taxes, improving the quality of life, reducing the government hassle factor, meeting a strategic goal, etc.) are not cost related or quantifiable. Rate the importance of these benefits on a "1 – 10" basis, with "10" being of highest importance. Check the "Benefits Not Cost Related or Quantifiable" box in the applicable row.

ROI Financial Worksheet

Annual Pre-Project Cost - How You Perform The Function(s) Now	
FTE Cost (salary plus benefits):	
Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):	
Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):	
A. Total Annual Pre-Project Cost:	
Annual Post-Project Cost – How You Propose to Perform the Function(s)	
FTE Cost:	
Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):	
Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):	
B. Total Annual Post-Project Cost:	
State Government Benefit (= A-B):	IPTV estimates that after the simulcast period is over, operating costs will be approximately the same with 4 times the service capabilities.
Annual Benefit Summary	
State Government Benefit:	
Citizen Benefit (including quantifiable "hidden taxes"):	**$6,391,213**
Opportunity Value and Risk/Loss Avoidance Benefit:	**$32,200,928**
C. Total Annual Project Benefit:	**$38,592,141**
D. Total Annual Project Cost:	**$1,466,667** **(15 yr. Life)**
Benefit / Cost Ratio (C / D):	**26.31** **Benefits are not quantifiable. Please see attached description.**
ROI (C – D / Project Funds Requested):	**338%**

☒ **Benefits Not Cost Related or Quantifiable (including non-quantifiable "hidden taxes")**

Iowa Public Television
IT Project Evaluation: Digital Television Conversion
Section 3: Benefits

If Iowa Public Television is unable to be on-air with eight digital transmitters by May, 2003, IPTV risks losing the digital licenses for the transmitters which are not on-air. If that were to happen, once the simulcast period is over, IPTV would be unable to transmit any signal in the areas where the digital licenses were lost.

Citizen Benefit:

This would place at risk the benefit the citizens of the State of Iowa receive from the services provided by Iowa Public Television. Through their contributions, viewers and supporters tell us they value the services they receive. In fiscal year 2000 alone, the following amounts were given:

Contributions to Friends of Iowa Public Television	$5,042,230
Contribution to the Iowa Public Television Foundation	$159,891
Underwriting	$1,189,092
Total Citizen Benefit	**$6,391,213**

Opportunity Value/Risk or Loss Avoidance Benefit:

If Iowa Public Television does not maintain full service we would risk losing matching funds from:

Corporation for Public Broadcasting	$1,455,120	
NTIA digital television conversion match (estimated) (25% of $30,000,000)	$7,500,000	
Sub-total	$8,955,120	$8,955,120
Mason City Project	$2,500,000	$2,500,000

Absent our service, Iowa Public Television would not have received the following grants:

U.S. Department of Education (Star Schools grant):	$6,102,095	
Carver Grant (for FY 2001)	$688,349	
Sub-total	$6,790,444	$6,790,444

The value of our prime time market only, based upon the commercial world business model (note 1).programming in the Des Moines/Ames	$10,347,750	
IPTV is the most efficient for schools in the State of Iowa. Estimated yearly savings in distribution system for educational video in distribution costs (note 2).	$580,500	
Cost benefit analysis of our Ready to Learn Services. (note 3)	$1,680,000	
Value of technical assistance provided to K-12 schools (note 4)	$291,200	
Savings to schools as a result of real time field trips (FY 1999) (per report submitted to Legislature)	$1,055,914	
Sub-total	$13,955,364	$13,955,364
Total Opportunity Value/Risk or Loss Avoidance Benefit		**$32,200,928**

Return on Investment Calculation:

Total Annual Project Benefit		$38,592,141
Total Annual Project Cost ($22,000,000/15 yr useful life)		$ 1,466,667
Benefit/Cost Ratio		**26.31**
ROI (C-D/Project Funds Requested) $37,125,474 / $11,000,000		**338%**
Total Annual Project Benefit ($38,592,141-1,466,667)	$37,125,474	
Project funds requested $22,000,000 divided by 2 year spending cycle	$11,000,000	

Benefits Not Cost Related or Quantifiable:

There are some project benefits that we have not been able to realistically quantify.

According to the Code of Iowa, Section 256.82 "The Iowa public broadcasting board is created to plan, establish, and operate educational radio and television facilities and other telecommunications services including narrowcast and broadcast systems to serve the educational needs of the state." According to Iowa Public Television's tenets,

- "Iowa Public Television provides public television, telecommunications, and other services that educate, inform, and enrich people's lives and
- Iowa Public Television manages assets to ensure the greatest possible public accessibility of programs and meet the needs of Iowans regardless of where they live or their ability to pay."

If Iowa Public Television was restricted to providing service to just a portion of the State of Iowa; IPTV could not fulfill its mission as defined in the Code of Iowa or as stated by its own mission statement.

For many of our viewers, our service is priceless and a dollar amount can not be placed on the value of those services. For example, how can you place a value on the benefits of IPTV received by Joel Windsor of Waterloo? When he was 15, he was in an auto accident, in a coma for two-and-a-half months, and his doctors said he'd never read or write again. Surely his doctors had never met Big Bird or Fred Rogers. Joel watched Sesame Street, learned his ABCs and how to count. Mister Rodgers taught him social skills. Joel graduated from Marshalltown High School and attended Iowa Lakes Community College.

We can not quantify the expanded services to Iowans which digital television will allow Iowa Public Television to provide.

Expanded Viewing: When programs are not being broadcast in high definition (HDTV), IPTV will be able to transmit four or more channels simultaneously. IPTV plans to use its digital facilities to multicast four separate channels of programming geared toward diverse audiences:

> *Children's Channel* - We THINK KIDS. Next to parents, television is a child's most influential teacher. Our extensive lineup of children's programming demonstrates our commitment to the future and to those who will take us there. To this end we will dedicate and entire channel as a safe place for children filled with pre-school and school age programming.

Prime Times - programming aimed at addressing the specific and unique interests and concerns of Iowa's senior population.

Lifelong Learning Television - a place for formal instructional programming and repeats of general audience how-to programming.

All-Iowa TV - We are a neighbor, committed to showcasing all that Iowa has to offer. That's why one of the cornerstones of our new service will be a channel that addresses the unique interests and needs of Iowans with programs about Iowa, for Iowans. Included in this service will be special coverage of public affairs issues, events and meetings, state government and legislative activities.

Over 1 million people use our services each week because they see on Iowa Public Television programming that is not available anywhere else.

Throughout the day, IPTV will use the big bandwidth of the digital television signal to transmit data and interactive educational applications. This material will reflect the ever-growing need to provide students with the ability to learn what's important in ways in which they can best understand it. Research shows us that learning happens when students' minds are actively engaged in the content. These tools will also provide lifelong learning opportunities to support Iowa's workforce in maintaining a competitive and vital economic environment in our state.

The conversion to digital television will ensure that Iowa Public Television shall continue to work towards the goals of the Vilsack/Pederson Leadership Agenda. Such goals consist of:

"…Education - A quality lifetime, lifelong education system for all Iowans.

- Iowa will be a nationally recognized leader in pre-kindergarten learning, emphasizing parents as their children's first and best teachers;
- Schools will be well connected with Iowans and their communities; and
- Opportunities to pursue post-secondary education and needed workplace skills enhancement will be increased …

...Workforce, Economy, and Agriculture - Iowa will be a world leader in the new economy.

- Grow, retain, and recruit a skilled workforce; and
- Prepare Iowa's communities for future grown and development…

…Accountable Democracy - the Executive Branch of State Government will be an organization of performance excellence.

- Government information and services will be offered when and where it is convenient to Iowans…"